

REMARKS

Favorable reconsideration of the above-identified application is respectfully requested in view of the following remarks.

Claims 1-5 and 7-33 are pending in this application, with Claims 1, 13, 14, 17-19, 24 and 29 being independent.

Examiner Milia is thanked for withdrawing the final rejections of the claims. However, new rejections are presented instead.

The Official Action rejects Claims 1-3, 7, 8, 10-15, 17-19, 22, 24, 27, 29 and 32 under 35 U.S.C. § 103(a) as being unpatentable over Japanese Patent Document No. 06-195421, hereinafter *Arakawa*, in view of U.S. Patent No. 6,480,196, hereinafter *Harrington*. Claims 4, 20, 25 and 30 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Arakawa* in view of *Harrington*, and further in view of U.S. Patent No. 5,629,752, hereinafter *Kinjo*. Claims 5, 21, 26 and 31 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Arakawa* in view of *Harrington* and further in view of *Kinjo* as applied to Claims 4, 20, 25 and 30, and further in view of U.S. Patent No. 6,469,805, hereinafter *Behlok*. Claims 9, 16, 23, 28 and 33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Arakawa* in view of *Harrington* as applied to Claims 1, 14, 19, 24 and 29, and further in view of U.S. Patent No. 5,845,304, hereinafter *Iijima*.

Page two of the present application describes some problems associated with extraction of line graphics from raster data such as handling of the information concerning the color within an enclosed area surrounded by a line graphic. For example, if the color of an enclosed area that is surrounded by a black contour line is green, the prior art was not capable of handling the vector data generated along the

black contour line and the information concerning the color (e.g., green) within the enclosed area as a package. That is, while the prior art could show line graphics that were extracted from raster data as vector data, it was not able to store the information concerning the colors of enclosed areas related to the vector data. Accordingly, it could not recreate the colors of the enclosed areas surrounded by the line graphics using the vector data, thus reducing the usefulness of the data.

Another problem with the prior art was that it extracts line graphics without taking line width into consideration. Figure 22 shows that when the prior art extracted a line graphic from raster data and executed vector conversion, it generated two enclosed areas, namely one that is surrounded by the outer edge of the frame line and another that is surrounded by the inner edge of the frame line. Therefore, when the line graphics were enlarged the line width was enlarged, and when the line graphics were shrunk the line width became smaller, which was undesirable.

Page eleven of the present application discusses an embodiment of an image processing unit that addresses those issues. The image processing unit 7 includes an area-identifying unit 19, a character recognition unit 21, a vector conversion unit 23, an enclosed area detection unit 27, a color detection unit 29, a copy image-processing unit 35, and a synthesizing unit 37. Specifically, the vector conversion unit 23 extracts line graphics that include lines and/or curves and generates vector data along the line graphics. In other words, the line graphics are lines or curves represented by raster data. The vector conversion unit contains a line width-detecting unit 25 that detects line width of the line graphics. The enclosed area extracting unit 27 extracts one or more enclosed areas surrounded by the extracted

line graphics. The color-detecting unit 29 detects not only the information concerning the colors of the line graphics but also the information concerning the colors inside the enclosed areas surrounded by the extracted line graphics, so that the detected color information can be handled as one image data.

It is important to understand that Figure 22 shows raster data that includes an inside area (white) that is surrounded by a line graphic (black), and that the line graphics referred to in the application are not merely edges of color areas, but rather graphic lines that are defined within the raster data.

Rejection of Claims 1-3, 7, 8, 10-15, 17-19, 22, 24, 27, 29 and 32

Claims 1-3, 7, 8, 10-15, 17-19, 22, 24, 27, 29 and 32 are rejected as being unpatentable over *Arakawa* in view of *Harrington*.

Claim 1 defines an image processing apparatus defining: 1) a memory that stores raster data obtained by scanning a graphic image, 2) a processor that is connected to the memory, 3) that the processor extracts line graphics based on the raster data, 4) that the processor generates vector data along the extracted line graphics, 5) that the processor extracts an enclosed area surrounded by the extracted line graphics, and 6) that the processor detects first information concerning the color within the extracted enclosed area and detects second information concerning a color of the line graphics.

Arakawa deals with raster image data that is created by a graphics computer or that is created by a scanner. According to *Arakawa*, raster image data is difficult to expand or scale (paragraph [0011]) because raster data is made up of a conglomeration of pixels having color. However, if the outline of an area of raster

data is defined by a vector the area of raster data becomes easier to move, amplify, expand/shrink, cutback, rotate, or otherwise manipulate. Therefore, *Arakawa* discloses scanning a textile pattern having areas of color (not surrounded by line graphics) and creating border-line data corresponding to the edge of the areas of color (paragraph [0010], lines 7-9 and Fig. 5.).

Border-line data used by *Arakawa* is merely data that corresponds to the edge of a color area. Paragraphs [0017-018] of *Arakawa* refer to the process of establishing vectors as "trace processing of the border-line data." First, the raster scan of a picture is displayed and a color number of the color area is chosen. Next, the border-line data (points on the border) of the area having that color number is established. Then, the border line of the color is traced along the border-line data and vectors are established connecting the points along the border, i.e., border-line data.

The Official Action sets forth the idea that *Arakawa* discloses all the features defined by Claim 1 except those directed toward detection of information concerning line widths of the extracted line graphics, and relies on *Harrington* for a disclosure of such.

However, even assuming *arguendo* that the characterization of *Harrington* is accurate, *Arakawa* still does not disclose the subject matter relating to extraction of line graphics based on raster data. In fact, there is no disclosure in *Arakawa* of an image that even possesses line graphics represented by raster data. It is important to understand that *Arakawa* does not distinguish between line graphics and color areas and therefore treats them the same way. That is, *Arakawa*'s border-line data is merely a tracing of the edge of color areas (Fig. 5) and does not represent line

graphics as referred to in the present application. In fact, based on the disclosure in *Arakawa*, the precise problem outlined in the application would not be addressed because even if line graphics were present in an image scanned by *Arakawa*, the outer perimeter of a line graphic would be traced in the same way as a color area. See Figure 22 (prior art) of the present application.

Also, *Arakawa* does not disclose detecting information concerning color of line graphics at least because it does not even disclose detection of line graphics. Further, even if one were to consider, *arguendo*, that the establishment of the vectors corresponds to detection of line graphics, there would have still been no motivation to assign a color to the vectors in *Arakawa* at least because they merely trace the edges of the color areas to which a color is assigned.

Arakawa also teaches away from detecting colors of line graphics, or assigning color to the vectors, because paragraph [0019] of *Arakawa* discloses that the vector data is 1 Bit each, thereby dispelling any possibility of vector data containing color information. That is, for a vector to contain color information, far more than 1 Bit of data would be required. 1 Bit of data is only enough to indicate on/off, as in binary language. Therefore, not only does *Arakawa* not disclose the subject matter relating to detection of a color of line graphics, but actually teaches away from it by disclosing that the vector data is 1 Bit.

Claim 1 is also allowable because even if *Harrington* does somehow disclose detection of line width of line graphics, *arguendo*, there would have been no motivation to modify *Arakawa* to include that subject matter. *Arakawa* discloses tracing the outline of a color area with vectors. At least because the outline of a color area is traced, there is no line width available to measure. Therefore, a skilled

person would not have been motivated to modify *Arakawa* to measure line width because that operation would serve no purpose. Should this rejection be maintained, it is requested that it be explained how or why, based on the intended operation of *Arakawa*, that one would want to measure a line width as referred to in the claims.

For at least those reasons, even assuming, *arguendo*, that the characterization of *Harrington* is accurate, *Arakawa* and *Harrington*, as relied upon in the Official Action fail to disclose or suggest each and every feature defined by Claim 1 and Claim 1 is allowable.

Claims 13, 14 17-19, 24 and 29 are allowable for similar reasons as those set forth with regard to Claim 1.

Claims 4, 20, 25 and 30

Claims 4, 20, 25 and 30 are rejected as being unpatentable over *Arakawa* and *Harrington* as applied to Claims 1, 19, 24 and 29 and further in view of *Kinjo*. *Kinjo* does not remedy the deficiencies of the rejections of the independent claims from which Claims 4, 20, 25 and 30 depend, and they are therefore allowable for at least the same reasons.

Claims 5, 21, 26 and 31

Claims 5, 21, 26 and 31 are rejected as being unpatentable over *Arakawa*, *Harrington*, and *Kinjo* as applied to Claims 4, 20, 25 and 30, and further in view of *Behlock*. *Behlock* does not remedy the deficiencies of the rejection of the

independent Claims from which Claims 5, 21, 26 and 31 depend, and they are therefore allowable for the same reasons.

Claims 9, 16, 23, 28 and 33

Claims 9, 16, 23, 28 and 33 are rejected as being unpatentable over *Arakawa* and *Harrington* as applied to Claims 1, 14, 19, 24 and 29, and further in view of *Iijima*. *Iijima* does not remedy the deficiencies of the rejection of the independent claims from which Claims 9, 16, 23, 28 and 33 depend, and they are therefore allowable for at least the same reasons.

For at least the reasons stated above, it is requested that all the rejections be withdrawn and that this application be allowed in a timely manner.

Should any questions arise in connection with this application, or should the Examiner feel that a teleconference with the undersigned would be helpful in resolving any remaining issues pertaining to this application, the undersigned respectfully request that he be contacted at the number indicated

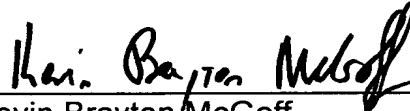
Respectfully submitted,

BUCHANAN INGERSOLL PC

(including attorneys from BURNS, DOANE, SWECKER & MATHIS)

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By: _____



Kevin Brayton McGoff
Registration No. 53,297

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620